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COMMERCIAL BANKING AND CAPITAL FORMATION

III

I. INTRODUCTION: THE PROBLEM OF LIQUIDITY

In the analysis of the various ways in which commercial banks provide funds for the business world, which constituted the subject-matter of the discussion in the preceding paper,¹ the question of the liquidity of assets was continually pertinent. Detailed discussion of this subject was, however, deliberately avoided there in the belief that it could best be treated as a separate topic. What now is the effect of investment or fixed capital uses of funds upon the liquidity of bank assets? Is the theory underlying our banking legislation wrong, or have our banks constantly been in a perilous condition, and is it because of investment loaning that we have had recurring financial disasters? In order to make an adequate analysis of the problem of liquidity it is necessary to differentiate between ordinary times and the occasional periods of great financial strain. We shall consider each in turn.

The theory underlying our commercial banking legislation has been, as already noted, that inasmuch as the deposits of commercial banks are largely demand obligations it is necessary for such banks to invest their funds mainly in short-time paper growing out of genuine commercial operations. With maturities carefully arranged in rotation it is argued that a bank may reasonably count on having funds coming in each day substantially equal to the amount going out. The chief difficulty arises of course during the periods of seasonal strain, and hence it is good policy to have an unusual amount of loans falling due at the beginning of such seasons. With an extensive and varied commercial clientèle it is believed that a carefully managed bank can get on with a very slender margin of reserve for day-to-day "till-money" purposes.²

¹ *Journal of Political Economy* (June, 1918), pp. 484-508.

² True, we required fairly large minimum reserves under the old national banking law, but this was not for till-money purposes. It was rather an ultimate or liquidation safety fund.

The test of efficient bank management is to keep the reserve at all times as low as possible—consistently of course with safety.

In the analysis of this problem of liquid assets we shall discuss the practice that has developed among the rank and file of efficiently managed banks. It will be necessary to confine our attention to the period before the establishment of the Federal Reserve System—for now liquidity of assets from the standpoint of an individual bank is mainly a matter of availability for rediscount, while the forms of paper that are available for such rediscount is merely a matter of legal definition. Since it was before the establishment of the Federal Reserve System that the theory that commercial paper is automatically self-liquidating and that investment paper is inherently unliquid was elaborated, we must test this doctrine in the light of experience before the law conferred special privileges upon commercial paper.

II. COMMERCIAL LOANS TO CUSTOMERS NOT A RELIABLE SECONDARY RESERVE

To what extent, first, are commercial loans to customers to be relied upon as the source of a steady inflow of funds to a bank? Theoretically, a short-time commercial loan, whether based on a specific transaction or on the excess of inflow over outflow of funds within the period of the loan,¹ is almost certain to be paid at maturity, because the use of the funds during the life of the loan automatically creates the means for its repayment. In practice, however, we find that commercial loans made to a bank's own customers are by no means universally liquidated at maturity. In the country banks it is not an uncommon practice to grant repeated renewals—a loan often being extended for many years.² These long extensions do not necessarily indicate that such loans are used for investment or that they constitute doubtful assets. They may indicate merely a continuous need for borrowed working capital. On the part of the bank it is simpler to extend the loan than to make a new one; on the part of the borrower it is more convenient

¹ See analysis in preceding paper, *Journal of Political Economy* (June, 1918), pp. 645-48.

² I know of one case where a single short-time note was extended seventeen years before payment.

to have the loan extended than to clean up or liquidate the business only to seek another loan the following day. It is probable, however, that in the country a considerable percentage of these renewed loans is devoted to non-commercial uses.

Even in the commercial centers renewals of commercial loans are very common, if not indeed the rule. Well-informed bankers have estimated that at least 40 or 50 per cent of unsecured loans in the large cities is renewed at maturity. In fact, bankers usually grant their customers renewals whenever they ask for an extension of time—so long as there are no disquieting developments in connection with the borrower's business—and with the reservation that the customer must pay off his loans entirely at least once a year.¹ This "pay once a year" practice should be constantly kept in mind, for it has a very important bearing on the whole theory of commercial loaning.

The reason for renewing short-time loans with such abandon is in part the stress of competition between rival banks and in part the *continuous* nature of so many lines of activity. To pay up means merely to borrow again immediately, for the business does not have sufficient working capital of its own to finance its operations. It is more convenient to grant a customer a "line of credit," to "rate a borrower" as a \$10,000 or a \$100,000 safe risk, and to force no payments so long as he keeps within the limit that has been set.

This continuous demand for working capital is characteristic of many lines of activity. Conspicuous among these, of course, are manufacturing, wholesaling, and retailing in staple lines. Mr. C. W. Barron states:

The theory is that a commercial loan based upon consumable products liquidates itself. But until the world stops eating and drinking, or wearing clothes, or consuming fuel, there is a new note right behind the one liquidated by the consumable commodities. Across the continent there is a line of sheep and a commercial note on the tail of each sheep in endless procession. There is no fluctuation possible with commercial notes based on consumable commodities unless prices are changed, or the capital of the merchant, or middleman, is expanded.²

¹ This reservation is by no means universally enforced. See analysis below, pp. 714-22.

² C. W. Barron, *Federal Reserve Act*, pp. 70-71.

Perhaps this is pushing a good point somewhat too far, but it is roughly applicable to many lines of industry.

It is not only in the case of large concerns dealing in staple lines that the business is not distinctly seasonal; it is equally true with the innumerable small retailers and shopmen engaged in general merchandising in staple lines. These also have continuous requirements for working capital, much of which is borrowed from banks on notes that are repeatedly renewed.

This point of view must of course not be carried to an extreme. It is to be borne in mind that many of these commercial notes are paid at maturity. Not all businesses have a continuous need for borrowed working capital; and in so far as businesses are seasonal commercial loans are not indefinitely renewed and funds do flow into the loaning bank at maturity. Reliance on these maturities as a secondary reserve is, however, unsatisfactory, owing to the fact that the banker can never know, so long as he adheres to the policy of renewing loans at the pleasure of the customer (with settlements once a year at best), just what percentage of the maturities of any given date will be paid. Except in the cases where it is definitely known that renewals will not be sought,¹ commercial-paper loans are in effect twelve months' loans,² this in accordance with the "clean up once a year" practice. In consequence, to insure a fairly steady flow of funds into the banks, the maturity dates for, say, three hundred different customers would have to be arranged for consecutive days throughout the year, with such variations as would be necessary to meet the periodic stresses. Such a rotation would, however, be possible only if the businesses represented by the three hundred customers chanced to reach their respective natural liquidating dates on three hundred different days. Although there are no very precise data bearing on this matter, it goes without saying that such is not the happy coincidence of affairs.

¹ True, the banker reserves the right to refuse a renewal if the loan appears doubtful; but we are speaking here of the degree of reliance that may typically be placed on an inflow of funds from maturing commercial loans, not on the means at the disposal of the bankers for avoiding ultimate losses.

² Of course it is not exactly twelve months. Some concerns with distinct seasons may be entirely cleaned up for several months.

It would be interesting to know to what extent such businesses as do pay regularly at maturity furnish the banks with a steady, as against an intermittent, flow of funds. Data on the subject do not appear to have been anywhere assembled, but it seems probable that the duration of loans to such concerns is long rather than short. Businesses dealing in staples are, as we have seen, likely to be granted renewals as a matter of convenience, and hence such liquidating of loans as they may make is not spread evenly over the year. It would appear, moreover, that the "pay at maturity" businesses would rather be those which are distinctly seasonal—with a fairly long production (if it is a manufacturer) and selling period and then a considerable interval of slack times during which no loans are required. The result of this is that a steady flow of funds into the bank from this source cannot be relied upon by any individual bank in any given locality. Manufacturers, for instance, generally have to borrow from six to nine or ten months for the reason that goods manufactured in January and February, for example, are often not purchased by the final customers until the following autumn. Banks may loan such concerns on three months' paper and renew the paper two or three times; or they may, as some banks do, make them six or nine months' loans in the first place and be done with it. The time for which a note runs, therefore, may or may not throw any light upon the probability of its payment at maturity. It is interesting to note in this connection that the loans through commercial paper houses, where renewals are never granted, are largely of six months' duration and seldom of so short a period as three months.

III. OTHER SECONDARY RESERVES

We may conclude from the foregoing analysis that the commercial paper of a bank's own customers is among the least reliable of all bank assets as a means of replenishing depleted reserves. Further evidence of the truth of this statement may be found in the practice that the banks commonly followed, prior to the Federal Reserve System, of employing other assets than customers' paper as a secondary reserve. Various methods have been used by the different banks in this connection; hence the statements which

follow cannot be taken as of universal applicability. With any given bank one or the other, or a combination of methods, has been used.

In the first place, the small suburban banks do not depend upon maturing commercial paper as a secondary reserve for ordinary requirements but rely upon their established connections with the larger banks. These small private and state banking institutions as a rule keep small resources of cash on hand and depend continuously upon the large commercial banks. They either borrow from these affiliated banks directly, or dispose of securities in the market, thus drawing indirectly upon other banks.

Secondly, a very general practice has developed, particularly since the panic of 1907, of using as a secondary reserve paper purchased through a commercial paper house. A large volume of this "purchased paper" is commonly bought by banks—with maturities arranged so that limited quantities will mature from day to day to meet current cash payments, and larger amounts will mature in periods of heavy demand for accommodation from local borrowers. It is estimated that the "purchased paper" annually held by the commercial banks of the United States now amounts to over four billion dollars. With this indirect method of loaning, the relationship between the bank and the borrowers is impersonal, and favors in the way of extensions of time are therefore neither asked nor expected. Such paper is never renewed, and hence a bank can count on funds coming in from its payment at maturity.

Other methods of securing funds in case of need are rediscounting between banks and interbank borrowing by sundry methods. Rediscounting did not develop into a general practice¹ before the Federal Reserve act, owing mainly to the local prejudice of customers against having their notes sent to the financial centers. It appeared to reflect upon the soundness of the bank if it had to borrow from La Salle Street or Wall Street—particularly if on the security of customers' notes. A much more common practice was that of having an official of a bank borrow on his single-name note, the funds thus borrowed being deposited in the name of the official, who of course would not withdraw the amount until the

¹ It was not, however, an uncommon practice in the South.

emergency was passed. A third very common method of inter-bank borrowing is selling bonds with an agreement to repurchase shortly. This is, in effect, a loan of funds on the bonds as security, though for convenience the bonds are sold outright, no note being given.

Finally, bonds have been extensively used as a secondary reserve. Bonds have long enjoyed a vogue among bankers in this

TABLE I
CHARACTER AND AMOUNT OF BONDS AND STOCK
INVESTMENTS

OF ALL NATIONAL BANKS*

| | |
|---|-------------|
| United States bonds..... | \$ 731,205 |
| State, county, and municipal bonds..... | 278,180 |
| Railroad bonds..... | 467,629 |
| Other public-service corporation bonds..... | 274,928 |
| All other bonds..... | 301,503 |
| Claim warrants..... | 43,818 |
| Judgments..... | 4,703 |
| Foreign government securities..... | 116,768 |
| Other foreign securities..... | 40,303 |
| Stocks..... | 39,272 |
| Total..... | \$2,298,309 |

* *Comptroller's Report* (1916), pp. 166-69. (000 omitted.)

OF 15,450 STATE BANKS†

| | |
|---|------------|
| United States bonds..... | \$ 1,311 |
| State, county, and municipal bonds..... | 31,440 |
| Railroads..... | 2,006 |
| Bonds of other public-service corporations (in- cluding street and interurban railway bonds) | 14,809 |
| Other bonds, stocks, warrants, etc..... | 643,721 |
| Total..... | \$ 693,287 |

† *Ibid.*, p. 852. (000 omitted.)

connection, and in ordinary times they may be readily sold through the machinery afforded by the organized exchanges. The serviceability of bonds for this purpose obviously depends upon their character, particularly their marketability. Table I shows the classification of bonds and stocks for national and state banks.

It is apparent that in the main bank investments in bonds are of high grade as to both security and marketability. It should be

understood, moreover, that it is unnecessary for *all* such holdings to be readily marketable, for the need of additional cash for seasonal demands is not unlimited. A margin of readily marketable securities is all that is required.

IV. LIQUIDITY OF COLLATERAL LOANS

Turning now to the liquidity of secured loans, we find that in practice the process of repayment of a time collateral loan is very similar to what it is with commercial loans. A great many collateral loans are paid at maturity from an excess of current income over outgo. If the loan is small in amount in comparison with the size of the business, payment at maturity can often be made even when the funds are devoted to fixed capital uses. And wherever collateral is deposited as a means of procuring working capital, as in the case of the underwriters, bond houses, and stockbrokers, such loans can very frequently be paid at maturity. The sale of the securities bought with the borrowed funds provides the means of payment, just as the sale of goods bought with borrowed funds provides the means of payment in the case of commercial loans. The only difference, as already noted, is that of the degree of risk involved, and hence of the certainty of prompt repayment, in the general run of cases.

But, like the commercial borrower, these financial dealers must borrow more or less continuously; though there is doubtless more variation than in staple lines of trade. It follows from this that renewals are, as in the case of commercial paper, freely granted. Available data do not disclose, however, whether the percentage of renewals is greater or less here than with commercial paper.

Where collateral loans are made for margin trading, however, the problem of repayment is somewhat different. Here the borrower is not a middleman engaged in the routine selling of securities. He may sell shortly if the market is favorable, but he may, on the other hand, hold his stocks for a considerable period. It is obviously because of this indefinite duration of the need for the borrowed funds that the broker prefers so commonly to borrow on call. Now unless the bank calls the loan we may conclude that as a rule the call loan is paid by the sale of securities bought with the borrowed

funds. It is thus a self-liquidating operation. But if the loan is called by the bank, then the borrower has to pay the loan by borrowing elsewhere, in which event the funds come from another bank.

All in all, it is undoubtedly true that time collateral loans are more reliable as a secondary reserve than commercial paper loans to customers. When an unsecured loan is not paid at maturity, the bank has no means of converting it into cash. But when a collateral loan is not paid, the bank has an alternative of disposing of the collateral in the open market.¹ The prevailingly lower rates on time collateral than on commercial loans in the United States attest their superior liquidity. It has often been pointed out that the rates on commercial paper in foreign countries are lower than those on collateral, but that in the United States we have had the "anomaly" of prevailingly lower rates on time collateral than on (self-liquidating) commercial loans. A sufficient explanation of the lower rates on commercial paper abroad is the liquidity given to commercial paper through the rediscount privileges extended to it by the central banks. This liquidity is therefore an arbitrary liquidity and does not arise from any automatic commercial processes. Similarly, a sufficient reason for the lower rates on time collateral in this country prior to the Federal Reserve law is the superior market for the conversion of collateral into cash, which is afforded by the stock exchange.²

V. COMMERCIAL BANKS FURNISH PERMANENT WORKING CAPITAL

There is a traditional theory that commercial banks make only temporary advances to borrowers, that they do not in any sense enter into partnership with business and furnish them permanent working capital. The facts of modern banking practice do not, however, bear out this assumption. In the foregoing discussion of secondary reserves we found that in many cases loans were repeatedly renewed, and that if settlements were made they were made

¹ It is often unwise for a banker to enforce this right, however, for he cannot afford to offend his customers needlessly. Close competition tends in many cases to render the banker timid in the matter of selling out a borrower.

² See Earl P. Carman, "The Change in Credit Methods Made Necessary by the Federal Reserve Act," *Commercial and Financial Chronicle* (1915), pp. 1396-97.

only once a year. In practice we find that concerns in staple lines very frequently do not completely liquidate at any time with their banker.

THE INDIVIDUAL BANK AND WORKING CAPITAL

Table II shows the monthly loans of a representative group of medium-sized concerns which borrow from a large Chicago bank.

The figures for the jobbing concern show that the jobber is able to clean up entirely every year as his activities are more of a seasonal nature than are those in the other lines.¹ Other concerns, on which I have data, which entirely liquidate are: brush manufacturer; printer and engraver; manufacturer of men's neckwear; jewelry jobber; lumber manufacturer. It is a common principle among the larger banks, however, that the smaller retailers should not borrow from the banks except for temporary extraordinary requirements—that they should have enough capital of their own to finance their normal operations. The smaller banks, however, often carry the little retailers continuously;² and very commonly the retailers are carried continuously by the wholesalers. Nystrom says, "while retailers are always paying up their debts to wholesalers, their purchases in advance of payments always run up into the hundreds of millions of dollars."³ He adds that the average amount of credit granted to retailers is estimated at from \$400,000,000 to \$750,000,000. The wholesalers, moreover, borrow heavily and more or less continuously from the commercial banks; hence the banks indirectly largely finance the marketing process as a whole.

How far American bankers have departed from the practice of lending only on the basis of specific, completed transactions, and how they now emphatically ally themselves with businesses in a more or less permanent way, may be understood by reference to the

¹ Medium-sized concerns are used here because the large establishments borrow from so many sources that the figures from a single bank reveal nothing. For borrowings of larger concerns through commercial paper houses see below, pp. 719-20.

² It is important to note in this connection that the large banks do not escape the responsibility of this permanent carrying of the retailers, for the smaller banks look to their correspondents, the larger banks, for accommodation when reserves are low.

³ *Economics of Retailing*, p. 36.

TABLE II
MONTHLY INDEBTEDNESS OF REPRESENTATIVE BORROWERS FROM BANKS*

| WHOLESALE GROCER† | | | | | |
|---------------------------|------|-------|------|-------|------|
| Net worth 1913, \$640,000 | | | | | |
| Net worth 1918, 970,000 | | | | | |
| Months | 1913 | 1914 | 1915 | 1916 | 1917 |
| January | 185 | 120 | 53 | 50 | 50 |
| February | 192 | 71 | 34 | ..... | 50 |
| March | 172 | 47 | 17 | 50 | 100 |
| April | 130 | 32 | 5 | 50 | 50 |
| May | 120 | 30 | 3 | 50 | 50 |
| June | 118 | ..... | 102 | 50 | 100 |
| July | 125 | ..... | 100 | 100 | 100 |
| August | 122 | ..... | 150 | 100 | 150 |
| September | 151 | 27 | 150 | 100 | 175 |
| October | 144 | 55 | 150 | ..... | 200 |
| November | 144 | 63 | 150 | 100 | 200 |
| December | 162 | 57 | 75 | 100 | 150 |

| CANNER OF FRUITS, ETC.‡ | | | | | |
|----------------------------|-----|-----|-----|-----|-------|
| Net worth 1913, \$ 790,000 | | | | | |
| Net worth 1918, 1,049,000 | | | | | |
| January | 65 | 185 | 50 | 105 | 215 |
| February | 85 | 190 | 95 | 100 | 185 |
| March | 100 | 185 | 95 | 105 | 75 |
| April | 100 | 165 | 80 | 90 | ..... |
| May | 85 | 135 | 75 | 95 | ..... |
| June | 100 | 100 | 70 | 90 | ..... |
| July | 115 | 90 | 70 | 60 | ..... |
| August | 115 | 40 | 70 | 35 | ..... |
| September | 120 | 40 | 80 | 80 | ..... |
| October | 130 | 45 | 130 | 120 | 105 |
| November | 150 | 45 | 140 | 155 | 70 |
| December | 150 | 40 | 105 | 180 | ..... |

| MANUFACTURER OF MEN'S CLOTHING | | | | | |
|--------------------------------|-------|-------|-----|-----|-----|
| Net worth 1913, \$300,000 | | | | | |
| Net worth 1918, 350,000 | | | | | |
| January . . . . . | ..... | ..... | 50 | 100 | 150 |
| February . . . . . | ..... | 10 | 100 | 125 | 200 |
| March . . . . . | ..... | 20 | 100 | 150 | 200 |
| April . . . . . | ..... | 50 | 65 | 150 | 175 |
| May . . . . . | ..... | 50 | 50 | 150 | 175 |
| June . . . . . | ..... | ..... | 50 | 150 | 150 |
| July . . . . . | ..... | 25 | 50 | 150 | 150 |
| August . . . . . | ..... | 50 | 50 | 200 | 125 |
| September . . . . . | ..... | 50 | 70 | 200 | 175 |
| October . . . . . | ..... | 35 | 70 | 200 | 175 |
| November . . . . . | ..... | 35 | 70 | 180 | 150 |
| December . . . . . | ..... | 50 | 70 | 180 | 150 |

* The figures represent dollars, 000 being omitted from each amount. The names of the concerns were furnished in confidence, hence they cannot be published.

† Also borrows elsewhere.

‡ Began to use broker in 1917.

TABLE II—*Continued*

MANUFACTURER OF PAINTS

Net worth 1913, \$190,000

Net worth 1918, 270,000

| Months | 1913 | 1914 | 1915 | 1916 | 1917 |
|----------------|-------|------|------|------|------|
| January..... | 20 | 5 | 35 | 55 | 70 |
| February..... | 45 | 10 | 60 | 75 | 90 |
| March..... | 65 | 60 | 70 | 100 | 125 |
| April..... | 65 | 65 | 75 | 105 | 135 |
| May..... | 60 | 65 | 70 | 95 | 115 |
| June..... | 60 | 60 | 50 | 85 | 95 |
| July..... | 40 | 45 | 40 | 65 | 65 |
| August..... | 20 | 40 | 25 | 50 | 50 |
| September..... | 10 | 35 | 20 | 35 | 35 |
| October..... | 5 | 15 | 15 | 30 | 30 |
| November..... | ..... | 10 | 15 | 35 | 45 |
| December..... | ..... | 25 | 35 | 45 | 50 |

JOBBER IN HIDES, WOOL, ETC.

Net worth 1913, \$ 975,000

Net worth 1918, 1,635,000

| | | | | | |
|----------------|-------|-----|-------|-------|-------|
| January..... | 125 | 195 | 197 | ..... | 244 |
| February..... | 85 | 151 | 71 | ..... | 264 |
| March..... | 60 | 120 | ..... | ..... | 131 |
| April..... | ..... | 71 | ..... | ..... | 80 |
| May..... | ..... | 71 | 25 | ..... | 40 |
| June..... | 25 | 163 | 62 | 50 | 104 |
| July..... | 172 | 289 | 286 | 259 | 209 |
| August..... | 223 | 312 | 239 | 289 | 80 |
| September..... | 245 | 315 | 132 | 289 | ..... |
| October..... | 172 | 176 | 107 | 318 | 16 |
| November..... | 169 | 78 | 27 | 391 | 157 |
| December..... | 177 | 126 | 27 | 341 | ..... |

following extracts describing the industrial service department of the National City Bank of New York. Mr. Schwedtmann, vice-president of the bank, states:

A large part of our commercial life is operated upon an industrial basis and the banks of the country must organize themselves to render credit-extension service sufficiently interpreted in terms of plant and equipment, personnel of officers, labor conditions in the factory, type and quality of product, profit and loss based on scientific cost.

The industrial service department hopes to place the emphasis in its relation with clients on better methods of doing business and on the necessity of scientific cost keeping and more efficient management.

That a business today is prosperous and can show a favorable balance sheet, that it now enjoys the best of credit locally and is by all who have relations with it held in high esteem, is certainly useful information; but it is by no means assurance positive that two, five, or ten years hence that business will still be in the running. Every institution, even as every individual, contains within itself the potentiality of better things or worse, and just as the sea is always calmest immediately before a storm, so the business apparently smooth and serene today may tomorrow or a year hence begin to develop the disorders which foretell the coming decline. The trained industrialist is not deceived by surface indications, but, like the skilled navigator, is able to look through and beyond and perceive an impending crisis in affairs long before there are book evidences of it.

The service must not, however, be merely preventive. It must at the same time furnish remedial advice, to the end that industries, although temporarily in a difficult position, may be helped into better financial standing and thus in due course become profitable and in line for definite extension of credit.¹

The following statement presents the view of a New York banker with reference to the annual liquidation of borrowers' indebtedness:²

The *theory* of business enterprise and finance would seem to require that the average business concern should liquidate its indebtedness to banks at least once a year. In *practice* this is seldom possible except in lines of business in which there is, say, but one or possibly two definite seasons. For example, the cotton seed oil and the beet sugar business occur to me as two lines of endeavor in which it is quite customary for a concern to "clean up" its bank indebtedness each year. The raw wool business is another. These are businesses, however, in which there is but one season, and it is the natural thing for concerns engaged in them to get out of debt at the end of the season and stay out until the next season arrives. Many shrewdly managed manufacturing concerns, principally those having a constantly turning business, do not go entirely out of debt, however, at any time. They may reduce their debt by substantial amounts and evidence the liquidity of their affairs in many ways, but they do not manage or care to "clean up" entirely. Many others do not even make the attempt. It should naturally follow in such cases that the owners of such businesses should increase the amount of permanent paid-in capital. Oftentimes, however, business managers hesitate to increase capitalization for fear the control of a business may slip out of their hands, and hold off as long as possible. There are many other reasons why business managers sometimes hesitate to increase the capital of a business when they ought to do so. But

¹ See *The Americas*, III, No. 10 (July, 1917), p. 9.

² Personal letter to the writer.

the mere fact that a concern should have additional capital does not necessarily mean that a business is not being managed properly. The bankers endeavor to consider every factor. In other words, it is impossible to place business concerns in but two classes: (1) the concern which cleans up each year and has ample capital resources; and (2) the concern which is short of working capital and therefore undeserving of banking accommodations. There are many grades and degrees of financial standing and banks find they must consider many factors.

These statements clearly indicate that the bank expects to tie itself up more or less permanently with its customers and to extend them continuous lines of credit, subject of course to some variations in amounts as seasons change. It certainly does not indicate a relationship in which the bank is merely to make temporary advances, extending each individual loan on its individual merits. Indeed, the sort of analysis required is not very different in its essentials from that made in connection with long-term credit extension. It should be added that this making of continuous loans does not in any way indicate insolvency on the part of the borrowers or that the analysis of the assets and liabilities has been faulty. The business may be solvent but unable to reduce all assets to cash without suspension as a going concern.

It is thus apparent that there are two ways of borrowing capital: one through the sale of stocks, bonds, short-time notes, etc.; the other by loans in perpetuity from commercial banks. As long as commercial banks have some cash resources constantly flowing in from deposits and some from payments of loans at maturity, and a good secondary reserve which can be converted into cash through the process of selling or borrowing from other banks as occasion demands, there appears to be no good reason why they should not make loans of a permanent nature¹ to well-organized and carefully managed businesses.

THE BANKING SYSTEM AND WORKING CAPITAL

A much clearer understanding may be gained of the relation of commercial banks to the supply of working capital if we now shift our attention from the individual commercial bank to commercial

¹ It should be recalled here that the loans thus made are used in the general business and are hence not exclusively working capital. The validity of the distinction between working and fixed capital under the conditions of modern business will be discussed in another connection.

banks in general. It will be found that the banking *system* very emphatically furnishes permanent working capital to business. The annual liquidation of his indebtedness which a borrower makes with his individual bank is often but nominal so far as the system as a whole is concerned; he may pay his loans to a given bank without reducing the loans of the banking system in general. For instance, it is often convenient to have two bankers and settle with one by borrowing from the other. This practice has been very common in the past, though it appears to have been much reduced in recent years.

A more common device is that of borrowing the funds to liquidate with one's own bank through the intermediation of a commercial paper house. It should be noted that to accomplish the desired results it is not necessary to wait until the maturity of the loan and then borrow through a broker the funds to pay the matured loans; it may be accomplished gradually. If a loan is due in November, one can borrow in September through a commercial paper house funds to be devoted to new financing while preparing to meet the payment at the bank in November from maturing trade bills. I should not wish to make too strong a statement in this connection, for it is not a universal custom; nor do I wish to be understood as condemning the practice. It is merely an evidence of the continuous need for borrowed funds in many lines and of the practical necessity for the commercial banks as a whole to make permanent loans to such businesses. In many cases it is impossible for a business to turn sufficient of its assets into cash at one time to liquidate its entire short-term indebtedness to banks without seriously deranging its affairs and producing a chain of unfortunate effects throughout related industries. Non-seasonal industries must borrow continuously from banks, periodically shut up shop, or else confine their operations to a cash basis.

A concrete illustration of the inability of the great staple lines to liquidate their obligations with banks as a whole may be taken from the packing industry. Loans to packers had always been considered extremely liquid, and when, in 1907, the Chicago banks were desirous of replenishing their reserves they asked Mr. Armour to liquidate his loans. Mr. Armour replied, "What! I who am liquidating the country and taking the cattle, sheep, and hogs that

are being daily sent to market to liquidate bank loans! I who am pushing pork and beef over to Europe for money, must curtail! Gentlemen, I am the liquidator! What would be the condition of your bank loans if I turned these cattle back to the farms?"¹

Now it is true that any particular packing-house note is liquid. It will be paid whenever a bank desires—even before maturity, it is said, as a matter of accommodation to a bank in need of funds. But such payments are largely effected through a shifting process, for the loan from bank A that is paid promptly reappears as a loan from bank B, the company having borrowed from bank B through the intermediation of a commercial paper house.² Attention should be directed at this place to the fact that it is usually understood between the commercial paper house and the borrower that if it is inconvenient for the latter to pay with his own funds the note when it matures, or if he does not or cannot borrow the means from his own bank, the broker will secure for him a new loan elsewhere. Although the payment of such loans is thus usually effected by means of new borrowing elsewhere, with the result that no reduction in the total of credit extended by banks is secured, there has nevertheless been a replenishment of resources as viewed from the standpoint of individual banks.

But while any particular packing-house loan is thus liquid, it is an entirely different matter when it comes to liquidating all of them at once. Banks—if not a single bank—furnish permanent working capital to the packers, and it would be impossible for the packing-houses to liquidate all their loans without disrupting the entire live-stock industry. According to Mr. Armour's testimony no very considerable reduction of packers' loans from banks can at any time be effected.

¹ Quoted by C. W. Barron, *op. cit.*

² It may be noted here that in borrowing permanent working capital from the commercial banks the packers are enabled to secure funds for continuous use at lower rates than would be possible if they borrowed these funds through the issue of bonds or short-term notes. In normal times the packers would have to pay a rate of interest on bonds or short-term notes of 5 per cent or more. But when they borrow the same funds from the commercial banks they are enabled to get them in ordinary times for about 4 per cent. Commercial banks will make their most favorable rates to the packers because from the point of view of any given bank a packing-house note when purchased through a commercial paper house is unusually liquid by virtue of the willingness of the packers, as indicated above, to pay the loan even before maturity if desired.

Table III shows the maximum and minimum indebtedness to banks of a representative list of concerns which borrowed through

TABLE III
MAXIMUM AND MINIMUM INDEBTEDNESS OF TYPICAL BORROWERS THROUGH
COMMERCIAL PAPER HOUSES*

| | MAX. | MIN. | MAX. | MIN. | MAX. | MIN. | MAX. | MIN. |
|---------|---------------------------|-------|---------------------------------------|-------|-----------------------------|-------|----------------------------------|-------|
| | Packer No. 1 | | Packer No. 2 | | Department Store | | Manufacturer of Farm Machinery | |
| 1913... | 2,000 | 280 | 800 | ..... | ..... | ..... | ..... | ..... |
| 1914... | 1,120 | 80 | 900 | 275 | ..... | ..... | ..... | ..... |
| 1915... | 3,915 | 1,375 | 1,600 | 100 | 400 | 300 | ..... | ..... |
| 1916... | 3,720 | 2,280 | 1,000 | ..... | 575 | 350 | 100 | ..... |
| 1917... | 8,117 | 4,425 | 1,510 | 250 | 650 | 300 | 300 | ..... |
| | Wholesale Dry Goods No. 1 | | Wholesale Dry Goods No. 2 | | Wholesale Dry Goods No. 3 | | Underwear Manufacturer | |
| 1913... | 400 | ..... | 570 | 95 | 885 | 200 | ..... | ..... |
| 1914... | 500 | ..... | 250 | 100 | 745 | 440 | 50 | ..... |
| 1915... | 950 | 300 | 285 | 125 | 1,435 | 345 | 40 | 15 |
| 1916... | 1,000 | 400 | 650 | ..... | 1,650 | 975 | 100 | ..... |
| 1917... | 1,200 | 200 | 765 | 120 | 2,735 | 990 | 240 | 25 |
| | Automobile Manufacturer | | Auto Tires, All Kinds of Rubber Goods | | Surgical Supplies | | Fuel, Ice, and Building Material | |
| 1913... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1914... | ..... | ..... | 781 | ..... | 60 | ..... | ..... | ..... |
| 1915... | ..... | ..... | 2,205 | ..... | ..... | ..... | ..... | ..... |
| 1916... | ..... | ..... | 4,815 | 2,815 | 220 | 30 | 435 | 175 |
| 1917... | 4,700 | 1,200 | 6,655 | 4,315 | 767 | 50 | 392 | 142 |
| | Mail Order House | | Dealer in Raw and Dressed Fur | | Tanner | | Manufacturer of Furniture | |
| 1913... | ..... | ..... | 355 | 15 | 560 | 210 | ..... | ..... |
| 1914... | 1,455 | 330 | 335 | 85 | 450 | 150 | 15 | ..... |
| 1915... | 765 | 535 | 210 | 85 | 490 | 335 | 65 | ..... |
| 1916... | 755 | 545 | 245 | 180 | 630 | 305 | 300 | 90 |
| 1917... | 1,060 | 610 | 395 | 135 | 1,080 | 420 | 360 | 215 |
| | Wholesale Grocer | | Manufacturer of Soaps and Perfumes | | Wholesale Spices and Coffee | | Woolen Manufacturer | |
| 1913... | 1,605 | 980 | 602 | 260 | ..... | ..... | 2,690 | ..... |
| 1914... | 1,165 | 415 | 630 | 297 | 400 | 140 | 800 | ..... |
| 1915... | 965 | 420 | 317 | 100 | 380 | 115 | 3,435 | 880 |
| 1916... | 1,240 | 475 | 150 | 75 | 420 | 130 | 4,600 | 1,425 |
| 1917... | 1,635 | 790 | 475 | 140 | 270 | 152 | 5,545 | 2,900 |

* The figures represent dollars, 000 being omitted from each amount. The names of the various companies were furnished in confidence, hence they cannot be published.

commercial paper houses during the last five years. Most of them are large concerns. The list of concerns given has been chosen at random and may be fairly regarded as typical. These figures do not tell the whole story because they do not show the total borrowings of these concerns from all sources, which would include both their own banks and commercial paper houses. It is not improbable that in some cases the partial liquidation that takes place is effected by larger borrowings at that time from their own banks. This possibility, however, should not be emphasized too strongly, for there are undoubtedly some seasonal variations in most of these lines. The figures as they stand, however, show conclusively that most businesses do not annually liquidate their indebtedness to banks.¹

It is apparent from the foregoing analysis that with any particular bank a not inconsiderable percentage of the so-called commercial loans are periodically renewed. It is clear also that the theory that commercial banks make only temporary advances to business men, that they do not furnish them with permanent working capital, is ill founded in fact. In a great many lines of business individual commercial banks supply permanent working capital to their customers, while the commercial banking system supplies permanent working capital to most lines of industry. The erroneous doctrine that has prevailed in this connection is attributable partly to ignorance of banking practice and partly to the method commonly employed in banking study of isolating the individual bank for consideration and ignoring the existence of the banking system.²

¹ It is worthy of note in this connection that it has also been the theory that borrowers should "clean up" at least once a year with commercial paper houses as well as with their own banks. It should be stated here, however, that the great rise of prices since 1914 has tended to increase the minimum indebtedness.

² In connection with this question of permanent or continuous loans of working capital it would be interesting to know to what extent the total of unsecured loans made by all commercial banks varies from one call of the comptroller to another. Data on this point are, however, not available. Do the periods of heavy demand in certain trades coincide with periods of slack demand in others so that the total of all such loans varies but little? Accurate data on this question would undoubtedly show wide variations in the totals for particular banks and considerable variations for different sections of the country in consequence of seasonal changes;

Finally it should be emphasized that in ordinary times the problem of liquidity is not a problem of maturing loans so much as it is a problem of shifting assets to other banks in exchange for cash. If one bank can always get help from another in case of trouble, there is no necessity of relying upon maturing loans. In fact, it is now everywhere recognized in banking circles that the way to attain the minimum in the matter of reserves is not by relying upon maturities¹ but by maintaining a considerable quantity of assets that can be shifted to other banks before maturity as necessity may require. Liquidity is tantamount to shiftability.

VI. LIQUIDITY IN TIMES OF CRISIS

On the occasions of great financial strain or crisis the problem of converting assets into cash is very different from what it is in ordinary times or in periods of seasonal stress. Again basing our conclusions on banking experience before the passage of the Federal Reserve act, we find that in time of crisis almost none of the assets of our banks are liquid in the sense that maturing obligations can be used to replenish reserves, and that so far as there is any liquidity at all it is the result of inter-bank accommodations.

Let us consider first the commercial paper of customers. When a crisis has reached an acute stage, it is absolutely impossible for a bank to compel any considerable number of loans to its customers to be paid. Renewals are certain to be almost universally demanded. Indeed it is a very first principle that the bank's customers must be "carried" in a time of stress. Moreover, there is

as, indeed, the statistics of currency movements reveal. But for all commercial banks, in a country of so vast an area and of such diversity of occupations as the United States, it is doubtful if any great variations in the total of non-collateral loans would be shown during the course of any normal year. The statistics for all loans, secured as well as unsecured, from one *call* to the next show remarkably little change—a fairly steady growth in the total of the *loans* item marking the successive abstracts of condition. This cannot be used to prove anything, however, since the variations in the demand for commercial funds might merely be offset by corresponding and resulting variations in the amount of speculative collateral loans.

¹ In the case of purchased paper we shall later see that the payments at maturity to bank A are usually made possible by increased loans from bank B. See below, pp. 724-25. Under the Federal Reserve System it is of course apparent that liquidity is a question of shiftability to the Federal Reserve banks.

an enormously increased demand for accommodation at such a time. It is a mere truism that the fundamental need in time of crisis is to expand loans, for to contract them is to precipitate a panic at once. It is one of the most surprising of the many inconsistencies in financial literature that so many writers insist upon the need for expanding loans in time of crisis and yet argue in other connections that commercial paper is a liquid asset which is indispensable for the safety of the credit structure in periods of acute financial strain.¹

Banks have long recognized the utter unreliability of commercial loans to customers as a secondary reserve for crises, and have in various ways attempted to substitute other assets for commercial paper as the secondary reserve. Paper bought through brokers has enjoyed much vogue in recent years. Many banks with such paper maturing during the crisis of 1907 obtained cash through its payment at maturity. Of course a practical difficulty in connection with such paper is a lack of knowledge as to when a crisis is to occur. Without such knowledge the number of maturities during the crisis period is a mere matter of chance. It is to be noted, moreover, that from the standpoint of the entire banking system such payments in no wise reduce the total bank loans. Bank X, in Chicago, having purchased paper from Mr. A, in Pittsburgh, receives through its payment an increase of cash resources. But is there any more reason for believing that Mr. A is in a better position to liquidate his business than he would have been had he secured this loan from his regular Pittsburgh bank? No, he must be carried by banks somewhere, if not by bank X, in Chicago. To pay his loan in Chicago A is therefore compelled to borrow from his regular Pittsburgh bank,² and so far as the banking system as a whole is concerned there has been no liquidation of indebtedness. Only in so far as this bank in

¹ That this notion has in no wise been allayed is clear from a perusal of recent financial articles and of the *Federal Reserve Bulletin*. Since the discussion attending the passage of the Federal Reserve System it appears to have become an *idée fixe* that commercial paper is self-liquidating, even in times of crisis, and that investment paper is seldom if ever liquid.

² The broker's agreement to sell A's notes elsewhere of course can seldom be kept in a time of crisis because the market for such paper is then stagnant. A's only recourse, therefore, is to seek accommodation from his regular bank.

Pittsburgh might chance to be less hard pressed than the bank in Chicago would this shifting of indebtedness be of benefit.¹ We may conclude, therefore, that purchased paper is little better than any other commercial paper when viewed from the standpoint of the banking system rather than from the standpoint of any single bank.

Time collateral loans have never been regarded by the banks as particularly liquid in time of crisis. In only a few cases would it be possible for borrowers to pay at maturity such loans as chance to mature during the period of stress. True, a bank has the alternative of selling the collateral rather than renewing the loan (though fear of losing a customer is often a strong deterrent to such action), and there is a slight advantage in this—dependent of course upon the extent to which such collateral can be disposed of in the market. But as the problems here are identical with those connected with call loans the two may conveniently be treated together.

It took a long experience indeed for the New York banks² finally to realize that call loans possess no considerable convertibility into cash in time of crisis. As viewed by the individual bank, call loans appeared to possess ideal liquidity, being terminable at the will of the bank and safeguarded by an ample margin of readily marketable securities. This situation, as we have seen, gives in ordinary times a large amount of flexibility to the banking system, but in time of crisis it is powerless to give any considerable relief. Usually the borrower on call cannot pay in time of crisis, and the banks therefore must attempt to sell the collateral. But when all banks are endeavoring to sell collateral and none wish to buy,³ the

¹ It is to be noted in this connection also that the more universal this practice of holding "purchased paper" as a secondary reserve becomes the less possible does it become for all banks to procure funds from its payment at maturity. When only a relatively few banks have such paper, they may replenish reserves by drawing the funds from other banks. The more nearly all banks come to rely upon this device the less can each gain thereby.

² The call-loan market exists only in New York, but the whole banking structure has been in considerable measure dependent upon it owing to the concentration of cash resources in New York, which are callable at the option of depositing banks.

³ Individuals are in a temper to buy few bonds or stock at such a time, and to the extent that they do buy they must draw the funds for the purpose from some banks somewhere in the system.

market for securities is automatically rendered stagnant. The experience of 1907 is too well known to require further statement on this point.

Investment in bonds for a secondary reserve for crises has also had its period of popularity in banking circles, and its impotence has been but slowly revealed, owing to the persistence with which most bankers refuse to look at the system as a whole. Such investments are of course practically analogous to collateral; they can be disposed of only to other banks. When all banks are subjected to pressure for heavy additional accommodations, the relief that can thus be afforded is virtually negligible.¹

Our own banking experience, as well as that of all other countries, has taught with the greatest possible conclusiveness that ability to pass through a crisis without suspension of specie payments and widespread credit disruption rests not upon the ability of the banks to convert assets into cash—that is, upon the liquidity of bank assets. It rests upon the ability either to draw upon unused reservoirs of reserves or to create new forms of reserve money that can be used as a basis for an expansion of loans. When once an acute crisis has developed, a panic can never be averted by liquidation. It is true that after our panics the liquidation that was effected, or the replenishment of bank reserves that soon occurred, resulted more largely from a payment of commercial loans that were then not renewed than from a reduction of the investment loans of commercial banks, but this is quite a different problem. Liquidation of commercial loans after a panic is not a means of preventing panic; indeed it is rather a liquidation that has resulted from the rude shock to business enterprise that the panic itself caused.

Let us see, however, if in the initial stages of a developing crisis commercial loans may not afford a means of retrenchment that will insure a return to normal conditions without an interregnum of financial disaster. If a conservative commercial loaning policy is pursued by the banks at such a time, the result is, first, a larger margin of reserves in the banks, and, secondly, a reduction

¹ See Hollander, "Security Holdings of National Banks," *American Economic Review*, III (1913), 793-814.

in the volume of output of industry—a general slowing down of the existing productive equipment of society, and hence of the flow of goods from producer to consumer. The first of these results places the banks in a better position to stand a subsequent heavy strain. The second is supposed to reduce the danger of subsequent tension or commercial crisis. A rapid reduction of commercial loans, however, is certain to meet with strong opposition from the business world, whose tone is so characteristically optimistic in times of expansion. Many business men may be found who will counsel a less rapid rate of expansion of business; but there are few indeed, even among bankers, who would wish an actual reduction. Moreover, from the standpoint of those in control it is recognized that a rapid reduction in the volume of business is likely to do much harm by virtue of its very suddenness. The proof that substantial liquidations have seldom been effected through the agency of the banking machinery when the economic cycle is on its strong upward swing is found in the fact that expansion generally proceeds in the absence of fortuitous events to the stage of acute crisis—when financial disruption may be avoided only by a rapid expansion of accommodations, leaving the liquidation to be automatically achieved in the period of depression which follows.

Under decentralized, independent banking it has never been possible for banks to avert a crisis through a restriction of commercial loans. And in the countries that have had centralized control it has usually been only the panic stage that has been avoided—and this by a temporary expansion of loans, or at least a declaration that all desiring loans for legitimate commercial purposes would be accommodated. True, the raising of the interest rate discourages unnecessary borrowing at the same time that it attracts additional reserve money from other countries; but this in practice has more often been an alleviative rather than a preventive of a critical condition.

The increasing of the interest rate as a means of preventing crises merits further discussion. It is obvious that if our Federal Reserve Board should be far-visioned enough to note the signs of a crisis a year or so before its actual occurrence the interest rate could be raised sufficiently to halt the crisis in its incipient

stages. Now it is assumed in current arguments on the liquid nature of commercial paper that it is only through commercial loans that our banks may bring such a retrenchment. Let us see. The curtailing of commercial loans results in lessening the volume of output of the existing capital equipment of society; it causes factories to run on part time and thereby reduces the flow of commercial goods from producer to consumer. We can in this way call a quick halt to trade; but it must be recalled that in the exercise of the assumed foresight we are interested, not in quick retrenchment, but rather in a gradual lessening of the rate of expansion. And this rate of expansion is more a problem of industry than of commerce. That is to say, business recovery from a period of depression is at first a matter of speeding-up existing equipment, but it soon becomes a matter of new construction of fixed capital; and incipient trouble would seldom arise until this stage of new building was well under way. If restriction of commercial loans, therefore, is to secure a real liquidation of business, it must slacken the rate of *industrial* expansion so that after an interval the fixed capital of society will have been readjusted to industrial requirements. Now a checking of commercial loans by raising the interest rate will shortly produce this result; for if existing equipment cannot find full employment new enterprise will be halted because of a lack of profit incentive.

But could not the same result be accomplished through a restriction of investment loans directly? Certain short-term investment loans are paid, from time to time, as we have seen, and a certain percentage of long-term investments is moreover always falling due. There is also a normal growth of investment business that is ordinarily financed by commercial banks. Suppose now that in a period of great expansion loans for this new financing are refused, or at least kept within conservative bounds. Would we not thereby secure a retardation of the rate of industrial expansion quite as well as before? Could not the development of new capital be thus checked without first restricting the output of existing equipment? Although without strong convictions in this connection I venture a tentative opinion that such a method would effect the desired readjustment with less shock and hence

more satisfactorily than would the method of curtailing commercial loans.

In practice, however, reliance need not be placed entirely on such a method of restriction. If the foresight of the Federal Reserve Board proves at any time to have been inadequate to accomplish the desired retrenchment by a curtailing of investment, and a critical condition in consequence develops, the opportunity of raising the rate on the commercial loans still affords a means of suddenly applying the brakes; for commercial banks supply loans for commercial purposes even when they are at the same time making loans for investment uses. It would seem therefore that the doctrine that commercial banks should confine their activities largely, if not exclusively, to commercial loans as a means of avoiding undue expansion of industry is ill advised.

This discussion of the relation of commercial loans to the economic crisis touches at one point the problem of the economic cycle. It should be borne in mind by the reader, however, that no attempt has been made here to study the general theory of business cycles. The argument given is merely a refutation of the doctrine that it is only by a curtailment of commercial loans that the business pace may be slackened through central control of the interest rate. It should perhaps be stated also that the present analysis has no bearing upon the causes of trade expansion or depression. May it be added here also that the widespread doctrine that investment loaning by commercial banks is the prime cause of financial crises does not square in the least with Mitchell's theory of business cycles?

VII. RECAPITULATION

The argument of this and the preceding article¹ may be recapitulated as follows:

1. The commercial banking system advances funds to the business world for both working and fixed capital uses. The statistics of all commercial banks show that something like 50 per cent of all *loans* is devoted to investment uses; and that in the neighborhood of two-thirds of all the credit extended by commercial banks goes for fixed rather than working capital.

¹ *Journal of Political Economy* (June, 1918), pp. 484-508.

2. In the process of making loans for both fixed and working capital uses the mechanism of commercial banking makes possible an expansion of cash resources in the ratio of approximately 16 to 1.

3. The problem of maintaining liquidity in ordinary times may be summarized as follows: (a) An individual bank does not place reliance to any great extent upon maturing obligations; liquidity is rather a matter of shifting assets to other banks in exchange for reserve funds. The result of this practice is to enable banks to maintain solvency with a much smaller ratio of reserves than would otherwise be necessary. (b) The commercial paper of a bank's own customers is thus among the least reliable forms of secondary reserve. It cannot be counted upon to furnish a steady inflow of funds from payments at maturity; it cannot readily be shifted to other banks. (c) Paper purchased through commercial paper houses is more reliable, owing to the practice of never granting renewals. Indirectly it thus enables any given bank to secure funds at date of maturity. (d) Among the most shiftable, and hence among the most liquid, of assets are bonds and stocks, both as direct investments and as collateral. The development of the corporate form of enterprise has largely undermined the theory of commercial banking as elaborated to fit the conditions of early nineteenth-century England. The share and bond as claims to fixed capital have a ready transferability; indeed the active securities that are listed on the exchanges have in normal times an almost instantaneous convertibility into cash. The result is that securities are from the standpoint of any individual bank incomparably more liquid in ordinary times than commercial paper of customers—assuming that no special machinery, such as reserve banks, has been developed to permit the same shifting of commercial paper.

4. The conclusions on the question of liquidity of bank assets in time of crisis are as follows: (a) none of the forms of bank assets can be counted on to furnish an inflow of funds at the banks through payment at maturity. (b) Because of the heavy demands of additional loans from customers everywhere, and the general depletion of bank reserves, little shifting of assets is possible. (c) A time of crisis reveals that the banks are tied up in a system;

that the banks as a whole must carry business as a whole; and that when the strain on all banks is heavy, the additional reserve funds required can be secured only by attracting them from other countries or by the manufacture of new forms of reserve money.

5. A curtailment of commercial loans through high interest rates has no advantage over a curtailment of investment loans as a means of checking the rate of industrial expansion in the incipient stages of a crisis. In any event the existence of investment loans does not preclude the possibility of checking expansion by curtailing commercial loans.

6. As by-products of this study of liquidity we find that individual commercial banks not uncommonly supply permanent working capital to their customers and that the commercial banking system, through the shifting process described, supplies permanent working capital to most lines of industry.

The broader conclusions that are to be drawn from this entire study of the nature of modern commercial banking cannot be briefly indicated. It may merely be stated here that this analysis has a very important bearing upon the theory underlying the Federal Reserve act and upon the practical policies that are being formulated by the Federal Reserve Board; and that it may be made to throw some light upon that important problem of general economic theory, the rapidity with which society as a whole makes provision for the future through the formation of capital goods.

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[*To be continued*]